

REMARKS

The Specification and the Drawings

The Examiner had rejected claims 27-30 under 35 U.S.C. §112 based upon the Examiner's contention that "The newly added limitations of water supply conduit and water discharge conduit were not described in the originally filed specification".

The Examiner then also objected to the drawings on the basis that the drawings allegedly did not show the water supply conduit and water discharge conduit as claimed.

With respect it is believed that the questions raised by the Examiner merely deal with the nomenclature on the structure which is already disclosed.

Two amendments have been made at pages 8 and 15 of the specification to clarify the fact that the elements 14 and 16 already illustrated in Figs. 1 and 4 comprise the water supply conduit 14 and water discharge 16 as those terms are used in amended claim 27. The amendment to paragraph 15 also emphasizes the directionality of flow which is shown by the arrows on recirculation conduit 60 in Figs. 1 and 4.

No new matter has been added. Applicant has merely clarified the terminology regarding components already illustrated and described in the original application.

Accordingly, it is respectfully submitted that the rejections under 35 U.S.C. §112 and the rejection of the drawings should be withdrawn.

The Substantive Rejections

First, it is noted that the claims have been amended so that only one independent claim, namely claim 27, is now presented. Thus the Examiner's fundamental rejections will be analyzed with regard to claim 27 as currently amended.

Claim 27 has been amended in three ways. First, it is noted that in the description of the water circulation through the recirculation conduit, claim 27 originally contained an error in that the water inlet and outlet had been reversed. That has been corrected.

Second, the language describing the direction of water recirculation through the recirculation conduit has been further amended to clarify that the recirculated water recirculates through the heat exchanger without having passed through "any portion of the water discharge conduit downstream of the recirculation conduit". As is apparent in viewing Figs. 1 and 4, the recirculation conduit 60 is in fact communicated to the water inlet 19 and water outlet 21 of the primary heat exchanger 18 by short portions of the water supply conduit 14 and water discharge conduit 16. The water which recirculates through recirculation conduit 60 passes back through the primary heat exchanger 18 without passing through any portion of the water discharge conduit 16 downstream of the point where the recirculation conduit 60 intersects with the water discharge conduit 16.

Finally, claim 27 has been amended to incorporate the element previously found in claim 29, mainly the controller which maintains the water temperature at the water inlet "at or above a selected temperature sufficient to prevent

condensation of combustion products from the burner on the exterior surface of the heat exchanger.”

Turning now to the Examiner’s rejections, it is respectfully submitted that claim 27 as amended is allowable over any combination of the cited references for the following reasons.

The Examiner’s two primary references are Kaneto et al. Japan Patent JP 08261491A and Miyake et al. Japan Patent JP 06074559A.

Both of those references are very similar in that they show water heating systems having a bypass which allows unheated water to flow from the water inlet to the water outlet so as to control the temperature of water at the water outlet. Neither of those systems is constructed to allow flow in the opposite direction, namely from the water outlet to the water inlet, and thus neither of those systems discloses a recirculation system as opposed to a bypass system.

Claim 27, as amended, however, is specifically directed to a recirculation system, “for directing recirculated water from the water outlet to the water inlet”.

As is apparent from the present application, Applicant’s flow of water from the water outlet to the water inlet through the recirculation conduit is for a completely different purpose than is either Kaneto or Miyake’s flow of water from the water inlet to the water outlet through a bypass conduit. The present system recirculates water so that it “maintains the water temperature at the water inlet to the inner flow path of the heat exchanger at or above a selected temperature sufficient to prevent condensation of combustion products from the burner on the exterior surface of the heat exchanger”. Thus, the purpose of Applicant’s circulation

from the water outlet to the water inlet through the recirculation conduit is for the prevention of condensation of combustion products in the primary heat exchanger.

Both Kaneto and Miyake, on the other hand, flow water in the opposite direction from their water inlet to their water outlet through a bypass conduit for the purpose of controlling the water temperature at the water outlet and thus controlling the water temperature which flows to the user of the water.

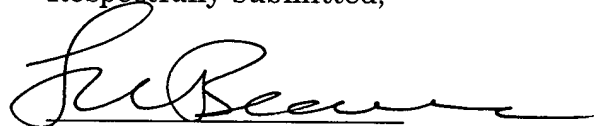
Thus, the system of claim 27 is very different from and is not in any way suggested by the system of either Kaneto or Miyake.

Accordingly, it is respectfully submitted that claim 27 and all the claims depending therefrom are allowable for the reasons just stated.

Conclusion

In summary, it is believed that the arguments and amendments set forth above are sound, and accordingly reconsideration is requested along with an early indication of the allowance of claims 27, 28 and 30-33.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'L. Beavers', with a long horizontal flourish extending to the right.

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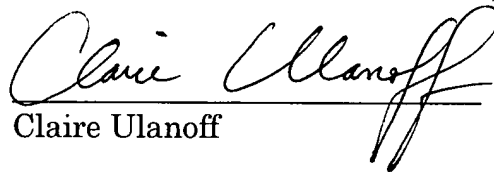
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